1. **Develop the programs in c, c++, java or python to the solve the following problem statements**

**Activity 1:**

Given an array, , of  integers, calculate and print the respective mean, median, and mode on separate lines. If your array contains more than one modal value, choose the numerically smallest one.

**Input format**:

1. The first line contains an integer, N, denoting the number of elements in the array.
2. The second line contains  N space-separated integers describing the array's elements.

**Output format**:

Print  lines of output in the following order:

1. Print the mean on a new line, to a scale of  decimal place
2. Print the median on a new line, to a scale of  decimal place
3. Print the mode on a new line; if more than one such value exists, print the numerically smallest one.

**Constraints**:

* N belongs to [10, 2500]
* X belongs to [0, 10000]

1. Given an array,A, of  N integers and an array, W, representing the respective weights of A's elements, calculate and print the weighted mean of A's elements. Your answer should be rounded to a scale of  decimal place

**Input format:**

1. The first line contains an integer, N, denoting the number of elements in arrays A and W.
2. The second line contains  N space-separated integers describing the respective elements of array A .
3. The third line contains  N space-separated integers describing the respective elements of W array .

Output format:

* Print the weighted mean on a new line. Your answer should be rounded to a scale of  1 decimal place (i.e.,  format).

Constraints:

* N=[5 to 50]
* ai=[0 to 100]
* Wi=[0 to. 100]

1. Given an array,X , of n  integers, calculate the respective first quartile (Q1), second quartile (Q2), and third quartile (Q3). It is guaranteed that ,Q1,Q2,Q3  are integers.

Input Format

* The first line contains an integer,n , denoting the number of elements in the array.
* The second line contains  n space-separated integers describing the array's elements.

Output format:

Print  lines of output in the following order:

1. The first line should be the value of Q1.
2. The second line should be the value of Q2.
3. The third line should be the value of Q3 .

Constraint:

1. n=[5 to 50]
2. xi=[0 to 100]
3. The interquartile range of an array is the difference between its first (Q1) and third (Q3) quartiles. Given an array,X, of  n integers and an array, F, representing the respective frequencies of X's elements, construct a data set,S, where each  occurs at frequency f. Then calculate and print S's interquartile range, rounded to a scale of

1 decimal place.

Input format:

The first line contains an integer,n, denoting the number of elements in arrays X and F .

The second line contains  n space-separated integers describing the respective elements of array X.

The third line contains  n space-separated integers describing the respective elements of array F.

**Output Format:**

Print the interquartile range for the expanded data set on a new line. Round your answer to a scale of  1 decimal place.